F I G. 1

F I G. 2

```
              ┌──────────────┐
              │    START     │
              └──────┬───────┘
                     ↓
        ┌─────────────────────────────┐
        │   CLEAR MANAGEMENT TABLE     │──── S2-1
        └──────────────┬──────────────┘
                       ↓
        ┌─────────────────────────────┐
        │ SEARCH FOR UPnP COMPATIBLE DEVICE │──── S2-2
        └──────────────┬──────────────┘
                       ↓
        ┌─────────────────────────────┐
        │   ACQUIRE PRINTER INFORMATION │──── S2-3
        └──────────────┬──────────────┘
                       ↓
        ┌─────────────────────────────┐
        │  PROTOCOL CONVERSION PROCESS  │──── S2-4
        └──────────────┬──────────────┘
                       ↓
         NO    ╱───────────────────╲    S2-5
        ◄──────    PowerOFF?         ─────
               ╲───────────────────╱
                       │ YES
                       ↓
        ┌─────────────────────────────┐
        │         ISSUE Bye            │──── S2-6
        └──────────────┬──────────────┘
                       ↓
              ┌──────────────┐
              │     END      │
              └──────────────┘
```

F I G. 3

SEARCH FOR UPnP
COMPATIBLE DEVICE

S3-1

ISSUE Probe PACKET

S3-3

ProbeMatch
RECEIVED?

YES

NO

S3-2

REGISTER DEVICE MANAGEMENT
TABLE AS UPnP COMPATIBLE DEVICE

END

F I G. 4

```
<Envelope>
  <Header>
    <Action>
        http://xxx/Probe
    </Action>
    <MessageID>
        uuid:0a6dc791-2be6-4991-9af1-454778a1917e
    <MessageID>
  </Header>
  <Body>
    <Probe>
        <Type>PrintBasic</Type>
    </Probe>
  </Body>
</Envelope>
```
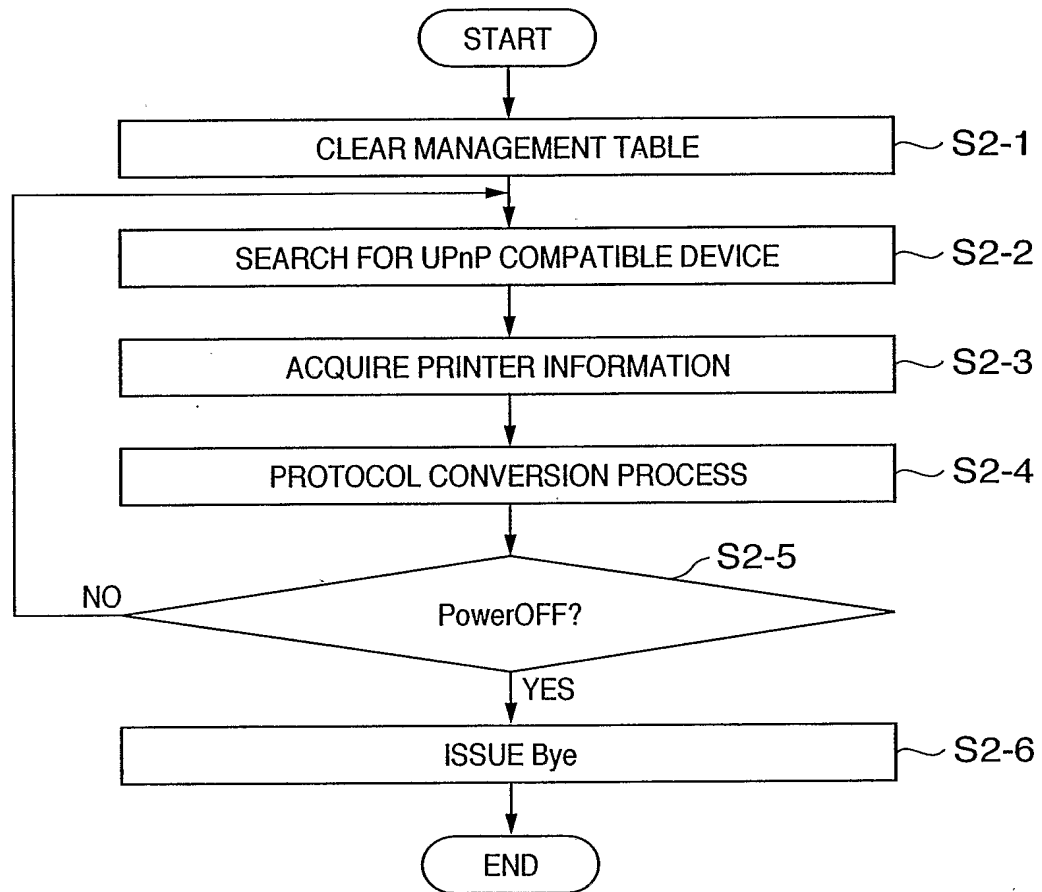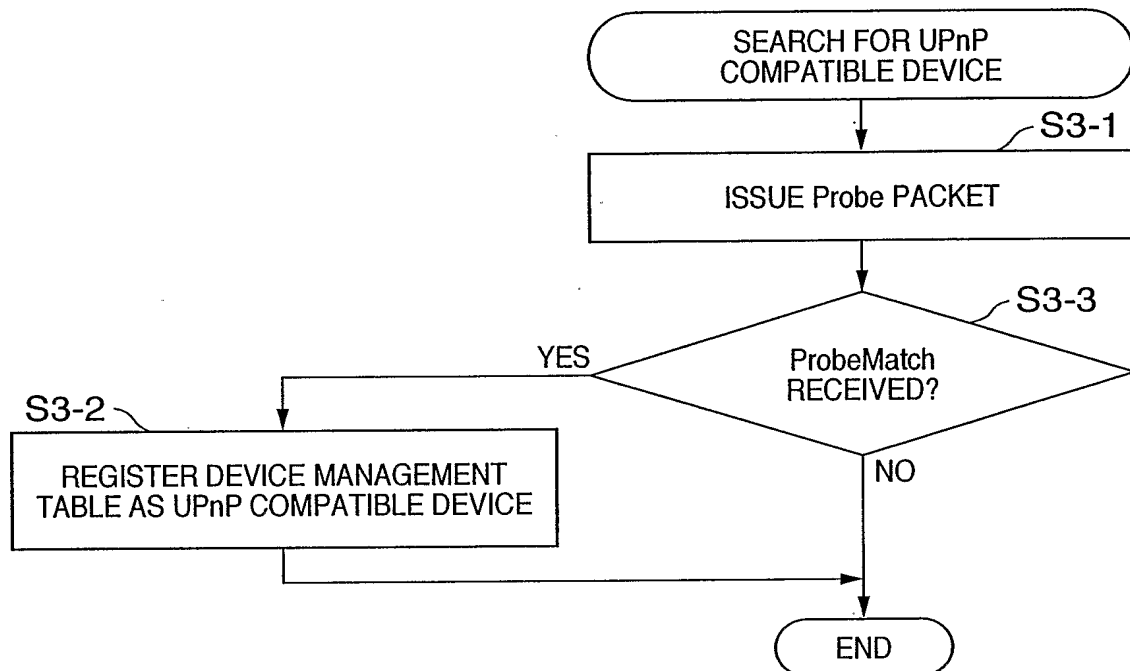
F I G. 5

```
<Envelope>
  <Header>
    <Action>
      http://xxx/ProbeMatch
    </Action>
    <MessageID>
      uuid:e32e6863-ea5e-4ee4-997e-69539 d1ft2cf
    <MessageID>
    <RelatesTo>
      uuid:0a6dc791-2be6-4991-9af1-454778a1917e
    </RelatesTo>
  </Header>
  <Body>
    <ProbeMatch>
      <EndpointReference>
        <Address>
          uuid:98190dc2-0890-4ef8-ac9a-5940995e611a
        </Address>
        <Types>PrintBasicPrintAdvanced</Types>
      </EndpointReference>
    </ProbeMatch>
  </Body>
</Envelope>
```
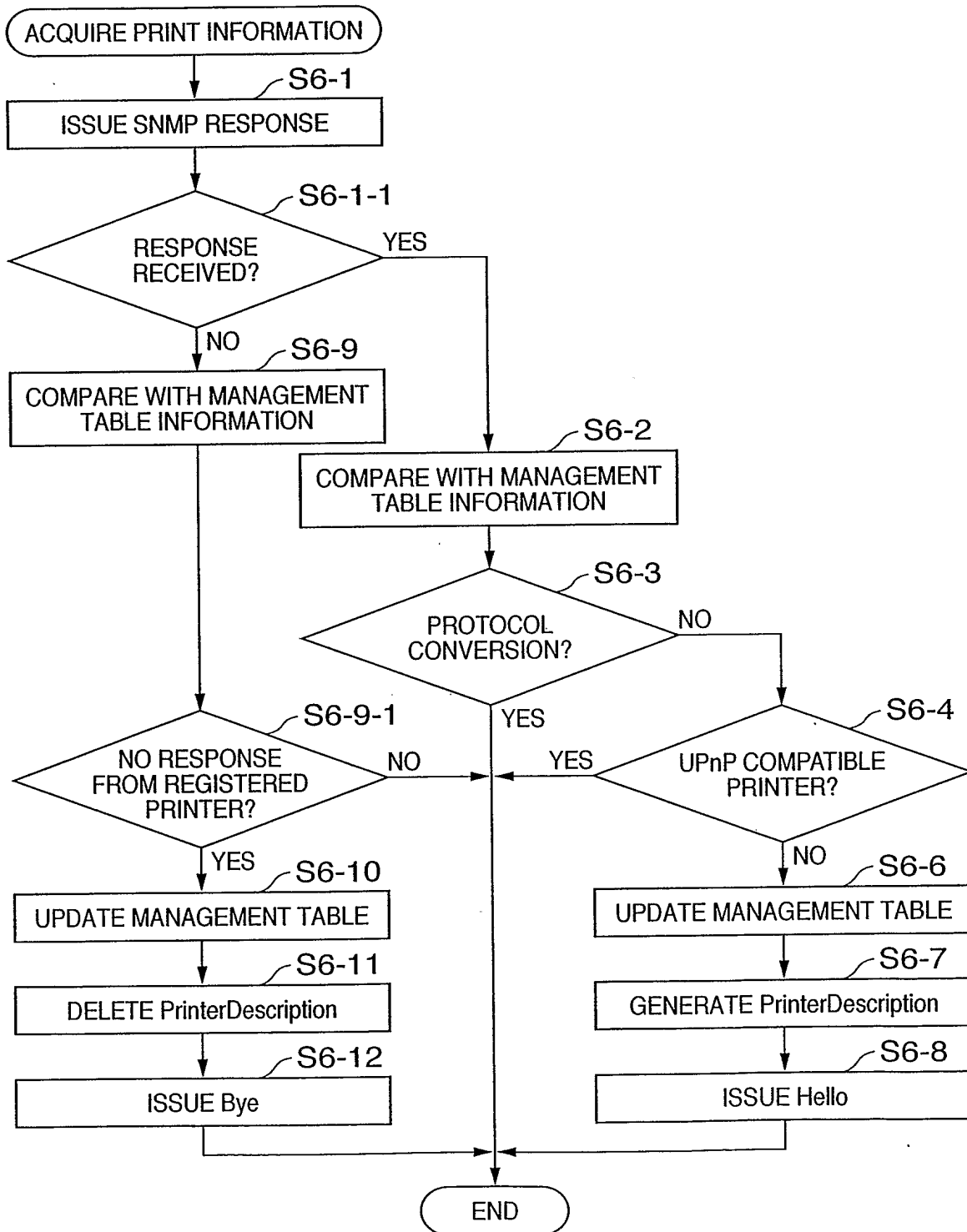
ProbeMatch FOR 22a

```
<Envelope>
  <Header>
    <Action>
      http://xxx/ProbeMatch
    </Action>
    <MessageID>
      uuid:e32e6863-ea5e-4ee4-997e-69539 d1ft2cf
    <MessageID>
    <RelatesTo>
      uuid:0a6dc791-2be6-4991-9af1-454778a1917e
    </RelatesTo>
  </Header>
  <Body>
    <ProbeMatch>
      <EndpointReference>
        <Address>
          uuid:98190dc2-0890-4ef8-ac9a-5940995e611a
        </Address>
        <Types>PrintBasicPrintAdvanced</Types>
      </EndpointReference>
    </ProbeMatch>
  </Body>
</Envelope>
```

ProbeMatch FOR 22b

F I G. 6

ACQUIRE PRINT INFORMATION

↓ S6-1

ISSUE SNMP RESPONSE

↓ S6-1-1

RESPONSE RECEIVED? — YES →

NO ↓ S6-9

COMPARE WITH MANAGEMENT TABLE INFORMATION

S6-2

COMPARE WITH MANAGEMENT TABLE INFORMATION

↓ S6-3

PROTOCOL CONVERSION? — NO →

YES

S6-9-1

NO RESPONSE FROM REGISTERED PRINTER? — NO →

S6-4

UPnP COMPATIBLE PRINTER? — YES →

YES ↓ S6-10

UPDATE MANAGEMENT TABLE

↓ S6-11

DELETE PrinterDescription

↓ S6-12

ISSUE Bye

NO ↓ S6-6

UPDATE MANAGEMENT TABLE

↓ S6-7

GENERATE PrinterDescription

↓ S6-8

ISSUE Hello

END

F I G. 7

```
<PrinterTable>
   <PrinterDescription>
      <DeviceId>
         MANUFACTURER:XXXX Inc.;
         COMMAND SET:PDL1 ;
         MODEL LaserBeamPrinter777 PDL1;
      </DeviceId>                              ◄——— DeviceID
      <PrinterLocation>Bldg Kosugi, Fli3, Rm3</PrinterLocation>
      <PrinterMakeAndModel> LaserBeamPrinter777 </PrinterMakeAndModel>
      <PrinterName>200 Printer </PrinterName>
      <IPAddress>123.123.123.123</IPAddress>
      <MACAddress>00-02-2D-69-43-89</MACAddress>
      <SupportedPDL>PDL1</SupportedPDL>
      <SupportedPrintProtocol>LPR</SupportedPrintProtocl>
      <Address>
         uuid98190dc2-0890-4ef8-ac9a-5940995e611c
      </Address>
      <Types>PrintBasic</Types>
   </PrinterDescription>
   <PrinterDescription>
      <DeviceId>
         MANUFACTURER:XXXX Inc.;
         COMMAND SET:PDL2 ;
         MODEL LaserBeamPrinter777 PDL2;
      </DeviceId>                              ◄——— DeviceID
      <PrinterLocation>Bldg Kosugi, Fli3, Rm3</PrinterLocation>
      <PrinterMakeAndModel> LaserBeamPrinter777 </PrinterMakeAndModel>
      <PrinterName>200 Printer </PrinterName>
      <IPAddress>123.123.123.123</IPAddress>
      <MACAddress>00-02-2D-69-43-89</MACAddress>
      <SupportedPDL>PDL2</SupportedPDL>
      <SupportedPrintProtocol>LPR</SupportedPrintProtocl>
      <Address>
         uuid98190dc2-0890-4ef8-ac9a-5940995e611c
      </Address>
      <Types>PrintBasic</Types>
   </PrinterDescription>
   ...
<PrinterTable>
```
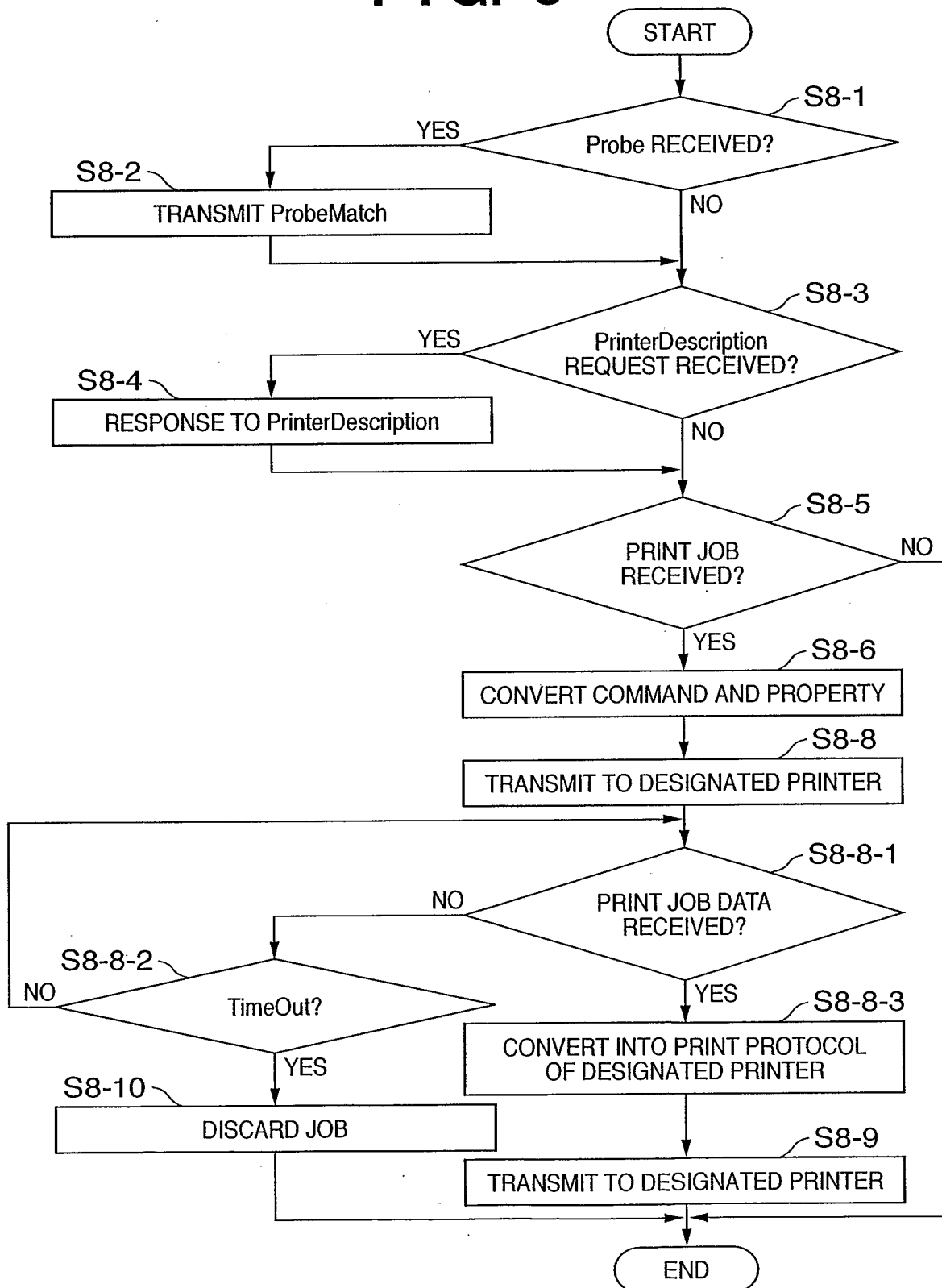
DEVICE MANAGEMENT TABLE FOR 8a

DEVICE MANAGEMENT TABLE FOR 8b

F I G. 8

FIG. 9

```
<Envelope>
 <Header>
  <MessageId>uuid:0911432-123b-2392-p423-9add28pon3jb</MessageId>
  <To>uuid:98190dc2-0890-4ef8-ac9a-59409995e611c</To>  ——  DESIGNATE Address
  <Types>PrintBasic</Types>
 </Header>
 <Body>
  <GetPrinterElementsRequest Type = PrinterDescription>
  </GetPrinterElementsRequest>
 </Body>
</Envelope>
```
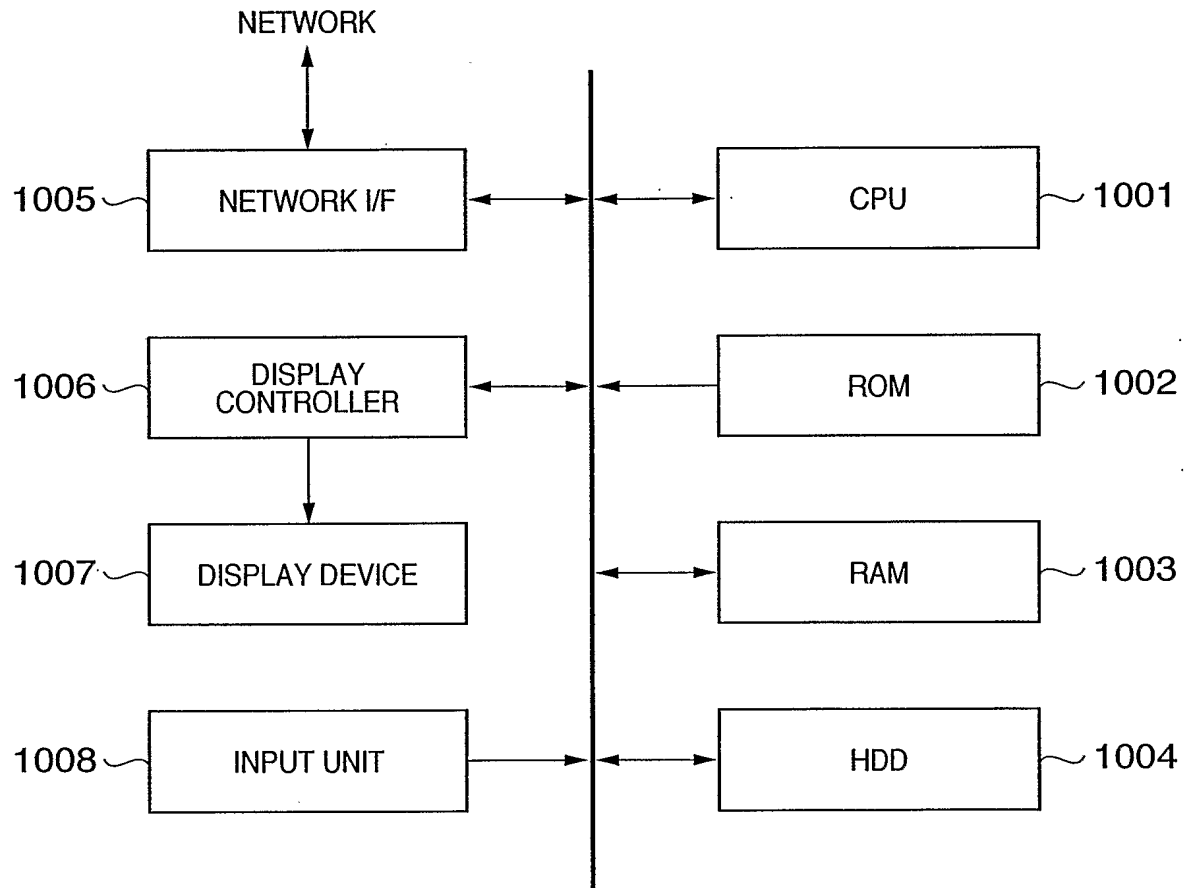
F I G. 10

```
<Envelope>
   <Header>
      <MessageId>uuid:09111432-123b-2392-p423-9add28pon3jb</MessageId>
      <ResponseTo>uuid:09111432-123b-5555-c787-2san15pip5ec</ResponseTo>
   </Header>
   <Body>
      <GetPrinterElementsResponse Type = PrinterDescription>
         <DeviceId>
            MANUFACTURER:XXXX inc.;
            COMMAND SET:PDL1;
            MODEL:LaserBeamPrinter777 PDL1
         </DeviceId>
         <PrinterLocation>Bldg Kosugi, Flr3, Rm3</PrinterLocation>
         <PrinterMakeAndModel>LaserBeamPrinter777</PrinterMakeAndModel>
         <PrinterName>200 Printer</PrinterName>
      </GetPrinterElementsResponse>
   </Body>
</Envelope>
```

F I G. 11

NETWORK

1005 — NETWORK I/F ⟷ CPU — 1001

1006 — DISPLAY CONTROLLER ⟷ ROM — 1002

1007 — DISPLAY DEVICE ⟷ RAM — 1003

1008 — INPUT UNIT ⟷ HDD — 1004

F I G. 12

NETWORK

| 2005 | NETWORK I/F | | CPU | 2001 |

| 2006 | RENDERING UNIT | | ROM | 2002 |

| 2007 | PRINT ENGINE |

| | | | RAM | 2003 |

| | | | CONTROL PANEL | 2004 |